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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte VAHID GOUDARZI, JULIO A. ABDALA,
and GULTEN GOUDARZI

Appeal 2009-010703
Application 10/678,489
Technology Center 2800

Before JOSEPH F. RUGGIERO, MAHSHID D. SAADAT,
and BRUCE R. WINSOR, *Administrative Patent Judges*.

WINSOR, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from a Non-Final Rejection of claims 7-20, which constitute all the claims pending in this application.[1] We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

STATEMENT OF THE CASE

Appellants' invention relates to modules where substrates having different coefficients of thermal expansion (CTE) are joined together by soldering using solder materials having different melting points in order to minimize cracking of the solder or the substrates. (Spec. ¶¶ [0005]-[0006]). Claim 7, which is illustrative of the invention, reads as follows:

> 7. A module, comprising:
>
> a first substrate comprised of a first material;
>
> at least a second substrate comprised of at least a second material;
>
> solder of a first composition residing between the first substrate and at least the second substrate on at least a first area; and
>
> solder of at least a second composition residing between the first substrate and at least the second substrate on at least a separate area from the first area such that the solder of the first composition and the solder of the second composition are vertically separated;
>
> wherein both the solder of the first composition and the solder of the second composition are in a collapsed state.

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[1] Rejections of claims 7-10, 12, and 14-20 under 35 U.S.C. § 102(b) as anticipated by Schwiebert and of claims 11 and 13 under 35 U.S.C. § 103(a) as unpatentable over Schwiebert in view of Degani are withdrawn by the Examiner (Ans. 5). As a result, claims 11 and 13 are not subject to any outstanding grounds for rejection.

The Examiner relies on the following prior art in rejecting the claims:

Degani	US 5,346,118	Sep. 13, 1994
Schwiebert	US 5,539,153	Jul. 23, 1996
Wood	US 6,150,717	Nov. 21, 2000

Claims 7-9, 15-17, and 20 stand rejected under 35 U.S.C. § 102(b) as anticipated by Degani.

Claims 7-10, 12, and 14-20 stand rejected under 35 U.S.C. § 102(b) as anticipated by Wood.

ISSUE

The pivotal issue presented by Appellants' arguments is as follows:

Does either Degani or Wood disclose a module having a "solder of a first composition" and a "solder of at least a second composition" as recited in claim 7?

ANALYSIS

Anticipation by Degani

Appellants contend that a person of ordinary skill in the art would understand the recitation of "solder of a first composition" and "solder of at least a second composition" as requiring a second composition of solder different from the first composition (Br. 5). The Examiner asserts that the first and second compositions are not necessarily different (Ans. 6) and reads the solder of a first composition and solder of a second composition on Degani's disclosure of two occurrences 12 of solder having the same composition (Degani, Figs. 3, 4).

We agree with Appellants. Although the recitations of a claim are to be given their broadest reasonable meaning consistent with the

Specification, *In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997), the interpretation must be reasonable. Where an interpretation of the claim by the Examiner renders words in the claim meaningless or superfluous, that interpretation is unreasonable. *See Stumbo v. Eastman Outdoors, Inc.*, 508 F.3d 1358, 1362 (Fed. Cir. 2007) (denouncing claim constructions that render phrases in claims superfluous). Here, if the first composition and the second composition are interpreted to read on the same composition, the words "first " and "second" have no meaning and would be read out of the claim. Accordingly, we find that claim 7, as properly construed, is limited to a module wherein the solder having "at least a second composition" has a different composition from the solder having "a first composition."

The Examiner has not identified in Degani solders of two different compositions (Ans. 3, 6-7). Accordingly, we do not sustain the rejection of claim 7, or of dependent claims 8, 9, 15-17, and 20, as anticipated by Degani.

Anticipation by Wood

Appellants contend that although Wood discloses solders 12M and 96 with different compositions (Wood, Figs. 11A-11E), at each separated location between the two substrates 10M and 94 (Wood, Fig. 11C) of the module, the solder in the module is a combination of the two solders, so that at each location the solder has the same overall composition (Br. 8). Appellants further contend that in Wood, only the solder 96 of one of the solder compositions is in a collapsed state (Wood, Figs. 11C, 11E; col 10, ll. 4-6), contrary to claim 7's recitation that "both the solder of the first composition and the solder of the second composition are in a collapsed state" (Br. 8-9). Additionally, implicit in Appellants' argument is the observation that in Wood's module, the solder of the first composition and solder of the second composition are not separated but are bonded to each other (*see* Wood, Figs. 11C, 11E; col. 10, ll. 6-12).

We understand the Examiner's position to be based on characterizing the solders 12M and 96 as formed on separate areas between the first and second substrate and vertically separated (Ans. 7). The Examiner further finds that Wood discloses, in column 9, ll. 63-64, that the first and second compositions of solder are collapsed (*id.*).

We agree with Appellants. We find that Wood discloses a module having the same solder composition at each separated location between the two substrates of the module. *See supra* discussion construing "first composition" and "second composition." We further find that, as shown in the intermediary product in Figure 11A of Wood, solder of a first composition and solder of a second composition are separated but not collapsed prior to assembly of the module. Therefore, because at least one of the solder of a first composition and solder of a second composition is collapsed but the solders are not separated after assembly (Wood, Figs. 11C, 11E), we find that Wood does not disclose a module having solders of two different compositions on separate areas where the different composition solders are separated and collapsed, as recited in claim 7.

Accordingly, we do not sustain the rejection of claim 7, or of dependent claims 8-10, 12, and 14-20, as anticipated by Wood.

ORDER

The decision of the Examiner to reject claims 7-20 is reversed.

REVERSED

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